

Retrospective Study of Acute Small Bowel Obstruction: In Eastern India.

Sasmita kumari Sethi¹, Bhuban Mohan Das², Nihar Ranjan Pradhan³

¹Assistant Professor, Department of Surgery, SCB Medical college and Hospital, Cuttack.

²Associate Professor, Dept.of Surgery, SCB Medical college and Hospital, Cuttack.

³Junior Resident, Department of Surgery. SCB Medical college and Hospital, Cuttack.

Received: April 2019

Accepted: April 2019

Copyright: © the author(s), publisher. It is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: This is a study conducted in a tertiary care hospital in eastern India aiming to provide detailed description of etiology progression and management of acute small bowel obstruction in our patients. **Methods:** Around 215 patients presented with features of acute intestinal obstruction. All presented with pain abdomen, vomiting and distension and constipation. **Results:** Subsequently 58 patients managed conservatively and rest 157 patients managed surgically. In most of the patients multiple air fluid level are the most common radiological findings. External hernias (34.4%) are the most common cause of acute small bowel obstruction. Resection and anastomosis(24.8%) done in of strangulated bowel and rest are managed by hernia repair, adhesiolysis and stomy formation. Wound infection are the most common post-operative complication. Morbidity(2%) and mortality was mainly due to old age and late presentation. **Conclusion:** In all cases early diagnosis and surgical intervention are the keys to reduce complications and mortality.

Keywords: Acute small bowel obstruction, Hernia repair, Strangulation.

INTRODUCTION

Intestinal obstruction is a common medical problem and accounts for a large percentage of surgical admission for acute abdominal pain. It may be acute, sub-acute or chronic depending upon the clinical presentation. The natural history of the condition, its response to treatment and the associated morbidity and mortality all vary depending on the type of obstruction present. Small bowel obstruction accounts for 12-16% of surgical admissions for acute abdominal conditions. It is mostly diagnosed by radiological investigation mostly by X-Ray of abdomen and pelvis. Type of intervention needed depends on the etiology of obstruction, and the severity of obstruction dictates the urgency of intervention. So successful management depends on comprehensive knowledge of etiology and pathophysiology of small bowel obstruction, good clinical judgement and sound technical skill.

Aims

Intestinal obstruction is one of the most common admitting diagnoses in surgery. Yet these patients

might be the most difficult to manage. This is a study conducted in a tertiary care hospital in eastern India might be the most difficult to manage. This is a study conducted in a tertiary care hospital in eastern India aiming to provide detailed description of etiology progression and management of acute small bowel obstruction in our patients.

MATERIALS AND METHODS

This is a retrospective study done at SCB Medical College and Hospital, Cuttack in different surgical wards of the Department of general surgery between January 2016 to December 2018 with the diagnosis of acute small bowel obstruction.

We included all the patients admitted with the diagnosis of acute small bowel obstruction and managed by surgery. Age more than 12 yrs. All sub-acute small bowel obstruction cases which are managed by surgery.

We excluded all paediatric patients. Patients of acute intestinal obstruction due to functional obstruction like any paralyticileus due to electrolyte imbalance or neurologic disturbances. Patients managed conservatively.

In this way we selected 215 patients. These were worked up by taking detailed history and clinical examination.

Subsequently 58 patients with sub-acute intestinal obstruction who were managed conservatively were excluded.

Name & Address of Corresponding Author

Dr Sasmita kumari Sethi

Assistant Professor,
Department of Surgery,
SCB Medical college and Hospital,
Cuttack.

RESULTS

A total of 157 patients with acute small bowel obstruction were selected for the study from January 2016 to December 2018 of them 108 patients (68.7%) were male and 49 patients (31.3%) were females. Males outnumbered females in a ratio of 2.2 : 1(M:F). Most common age group affected are 40-60 years i.e around 41.4% followed by 60-80 years i.e 33.7%. Least number of patients are affected were in between 12-20 years in our series.

Table 1: Age distribution of patients with acute small bowel obstruction.

Age Range(Yrs)	No of patients	Percentage
>12 - <20	05	3.1
20-40	31	19.7
40-60	65	41.4
60-80	53	33.7
>80	03	1.9

Regarding the etiology of acute small bowel obstruction in our study external hernia is the most common cause of acute small bowel obstruction i.e in 54 patients (34.4%) among 157 patients. This external hernia includes obstructed or strangulated inguinal hernia 35 (65%), incisional and ventral hernia 19 (35%) followed by adhesion in 43 (27.4%) patients, which may be due to bands or post-operative cases. In 21 (13.4%) of patients of appendicitis presented with acute intestinal obstruction. The less common causes are tuberculosis, appendicitis, Intussusceptions, internal hernias and miscellaneous cases. We found SMA syndrome, GIST of jejunum, small bowel volvulus, ileo-sigmoid knotting and foreign body as miscellaneous cases.

Table 2: Etiology of acute small bowel obstruction in our series.

Etiology	No of patients	Percentage
External hernias	54	34.4
Adhesive obstruction	43	27.4
Appendicitis	21	13.4
Tuberculosis	17	10.8
Intussusception	10	6.4
Internal hernias	3	1.9
Miscellaneous	9	5.7

In our series most common symptom was abdominal pain followed by vomiting and distension with constipation.

The most common radiological finding was multiple air fluid level with distended bowel loops.

All the patients were managed by operative intervention. Factors prompting surgical intervention include worsening of abdominal pain and distension, high grade fever, leucocytosis, tachycardia, and peritonitis. After exploratory laparotomy surgical Procedure done based on intraoperative findings. Out of 157 cases most common procedure done was external hernia repair (34.4%) followed by

adhesiolysis (27.4%), resection and anastomosis if strangulated bowel was present and stomy formation. Out of 157 cases 12 out of 27 cases were strangulated (17.2%) and the most common cause of strangulated small bowel is external hernia. 7 patients out of 43 patients of adhesive obstruction were strangulated, 6 patients out of 10 patients of intussusceptions and 1 patient of internal hernia and 1 patient of miscellaneous cases were strangulated. In external hernia 44 (28%) of cases are due to inguinal hernias and rest are due to other causes. Modified Basini's repair was done in all inguinal hernias and repair of the defect done in other external hernias. Adhesiolysis done in 43(27.4%) of cases due to bands and adhesion and resection and anastomosis if required, loop ileostomy done in 16 (10%) of cases. Resection and anastomosis done in 39(28.4%) cases.

Table 3: Surgical procedures of patients with acute small bowel obstruction.

Surgical procedures	No of patients	Percentage
Modified Basini's repair.	44	28
Adhesiolysis	43	27.4
Resection and anastomosis	39	24.8
Appendicectomy	21	13.4
Loop ileostomy	16	10.1
Miscellaneous	4	2.6

Out of 157 patients complication in post-operative periods occurs in 39(24.8%) of cases, of these 26 (16.5%) patients had wound infection, 7 (4.5%) patients had wound dehiscence, anastomotic leakage in 3 (1.9%) patients, respiratory complication in 3 (1.9%) patients and sepsis in 6 (3.8%) patients mainly due to immune compromised conditions like tuberculosis, AIDS patients, Respiratory complications developed mostly in elderly patients and in chronic smokers. In our series we found wound infection as the most common complications. Secondary suture applied in all cases of wound dehiscence and in few cases of wound infections. In our case series mortality rate was 3 (1.9%) mostly due to old age and strangulated bowel.

Table 4: Post-operative complications.

Complications	No of patients	Percentage
Wound infection	26	16.8
Wound dehiscence	7	4.5
Respiratory complications	3	1.9
Anastomotic leakage	3	1.9

DISCUSSION

Acute small bowel obstruction is one of the most common surgical emergencies. The mean age of incidence in present study is 50 years which is compared to other epidemiological studies. In our

study male outnumbered females (M:F- 2.2:1) though there is very minimal difference. From various aetiologies of acute small bowel obstruction external hernia account 54(34.4%) of cases with adhesions whether post-operative or due to band contribute 43(27.4%) of cases. This in contrast to western literature where most common cause of small bowel obstruction is adhesion. The tuberculosis is prevalent in Indian subcontinent. We had 17 (10.8 %) of patients of intestinal tuberculosis causing obstruction and requiring surgery.

The clinical parameters like continuous pain and fever ($>37.5^{\circ}\text{C}$), tachycardia ($>100/\text{min}$) and abdominal examination finding enable us to detect the presence of strangulation. From radiological investigation we have not got positive air fluid level in early stage of obstruction in cases of inguinal hernias. The reported accuracy of radiography for the diagnosis of small bowel obstruction varies from 50%-86%.

Nandyala VNR et al reported 63% and 37% incidence of leucocytosis and hypotension which coincides in our series of strangulated cases with leucocytosis and hypotension. Post-operative hospital course of 119 (75.7%) of patients were uneventful. The most common cause of morbidity was wound infection 26(16.8%). Respiratory complications were present in 2 (1.9%) and sepsis 6 (3.8%) of cases.

Landercasper et al reported 3% incidence of wound infection, 4.6% of respiratory complication which is comparable to the findings in our series. Mortality in the present study was 3 (1.9%) and mostly due to strangulated bowel.

Ti and Yong found that extremes of age, premorbid illness, bowel gangrene and malignancy increased the death rates.

Deutsch et al found a significant relation between strangulation and death. The death rate was more in strangulated group.

CONCLUSION

Our study reveals that acute small bowel obstruction comprise of a major percentage of surgical emergencies and can cause significant morbidity and mortality if it is strangulated. External hernias and adhesion are the most common cause of small intestinal obstruction. It also highlights that majority of patients mortality rates are due to strangulation, septicaemia, late presentation and presence of other comorbid factors i.e elderly age, cardio pulmonary disease and immunologically deprived patients.

In all cases early diagnosis and surgical intervention are the keys to reduce complications and mortality.

REFERENCES

- Miller G, Boman J, ShrierI, et al: Etiology of small bowel obstruction, Am J Surg, 180:33. 2000.

- Cheadle WG, Garr EE, Richardson JD. The importance of early diagnosis of small bowel obstruction. Am Surg 1988;54:565.
- Thompson MW, Kikani RK, Smith BB, et al: Accuracy of abdominal radiography in acute small bowel obstruction: Does reviewer experience matter? AJR Am J Roentgenol 188:W233, 2007.
- Thompson MW, Kikani RK, Smith BB, et al: Accuracy of abdominal radiography in acute small bowel obstruction: Does reviewer experience matter? AJR Am J Roentgenol 2007; 188:W233.
- Hayanga AJ, Bass-Wilkins K, Bulkley GB: Current management of small bowel obstruction. Adv Surg 39:1-33, 2005.
- Davidson AT Sr: Early operation in the treatment of small bowel obstruction. J Natl Med Assoc 73:245, 1981.
- Shatila AH, Chamberlain BE, Webb WR: Current status in the diagnosis and management of strangulation obstruction of the small bowel. Am Surg 132:299, 1976.
- McEntee G, Pender D, Mulvin D: Current spectrum of intestinal obstruction. Br J Surg 74:976, 1987.
- Silen W, Hein MF, Goldman L: Strangulation obstruction of small intestine. Arch Surg 85:121, 1962.
- Fevang BT, Jensen D, Svanes K, et al: Early operation or conservative management of patients with small bowel obstruction? Eur Surg 168:475, 2002.
- Miller G, Boman J, Shrier I, et al: Natural history of patients with adhesive small bowel obstruction. Br J Surg 87:1240, 2000.
- Ellis H: The clinical significance of adhesions: Focus on intestinal obstruction. Eur J Surg Suppl(577):5, 1997.
- Goarlav, Barmia NN, Domanski BV, Esebua BA: Surgical treatment of acute intestinal obstruction. Khir 1991;(4):1-3.
- Beck DE, Opelka FG, Bailey HR, et al: Incidence of small bowel obstruction and adhesiolysis after open colorectal and general surgery. Dis Colon Rectum 1999; 42:241.
- Nieuwenhuijzen M, Reijnen MM, Kuijpers JH, van Goor H: Small bowel obstruction after total or subtotal colectomy: a 10-year retrospective review. Br J Surg 1998; 85:1242.
- Chaib F, Toniolo CH, Figueira NC, Santanail: Surgical treatment of intestinal obstruction. Ann Gastroenterol 1990 Oct-Dec;27(4):182-6.
- Shatila AH, Chamberlain BE, Webb WR: Current status in diagnosis and management of strangulation obstruction of small bowel. Am J Surg 299:132, 1976.

How to cite this article: Sethi SK, Das BM, Pradhan NR. Retrospective Study of Acute Small Bowel Obstruction: In Eastern India. Ann. Int. Med. Den. Res. 2019; 5(3):SG36-SG38.

Source of Support: Nil, **Conflict of Interest:** None declared